4.5.9.1 Compliance with Air Emission Standards

As discussed in Sections 3.3.2.3, 3.3.3, and 4.3.3, the Facility is, and in the SMI Valley Infill will be, in compliance with all applicable standards and guidelines, including the Federal New Source Performance Standards (40 CFR Part 60 Subpart WWW and Subpart XXX: Standards of Performance for Municipal Solid Waste Landfills), the National Ambient Air Quality Standards, the New York State Ambient Air Quality Standards, the NYSDEC Guidelines for the Control of Toxic Ambient Air Contaminants, and the Facility's Title V permit.

Under the Clean Air Act, a facility's Title V sets forth all emission limits for all regulated emission sources at a facility into a single comprehensive permit. The Facility's Title V permit imposes emission limits for the following pollutants: non-methane organic compounds (NMOC), total volatile organic compounds (VOCs), carbon monoxide (CO), oxides of nitrogen (NO_x), sulfur dioxide (SO_2), particulate matter (PM), total hazardous air pollutants (HAP), and hydrogen sulfide (H_2S).

Under the Clean Air Act, USEPA was tasked with setting the New Source Performance Standards and the National Ambient Air Quality Standards for air pollutants, accurately reflecting the latest scientific knowledge useful in indicating the kind and extent of all identifiable effects on public health or welfare which may be expected from the presence of such pollutant in the ambient air (42) USC § 7408). In setting the standards, USEPA was required to consider:

- Variable factors (including atmospheric conditions) which of themselves or in combination with other factors may alter the effects on public health or welfare of such air pollutant.
- The types of air pollutants which, when present in the atmosphere, may interact with such pollutant to produce an adverse effect on public health or welfare.
- Any known or anticipated adverse effects on welfare.

In addition, USEPA was required to confer with appropriate advisory committees, federal agencies, and the academic community regarding the latest scientific information concerning exposure to pollutants. Moreover, USEPA is required to modify the standards as appropriate as new scientific information becomes available on the health impacts of the pollutants.

EPA set New Source Performance Standards and the National Ambient Air Quality Standards for VOCs, CO, NOx, SO2, PM, and HAP to protect the public health from any known or anticipated adverse effects associated with the presence of such air pollutants in the ambient air, allowing an adequate margin of safety (42 USC § 7409).

Similarly, as discussed in Section 4.3.2, when setting the Guidelines for the Control of Toxic Ambient Air Contaminants, NYSDEC analyzed the impacts of air pollutants on public health. Guidelines for the Control of Toxic Ambient Air Contaminants (AGCs) are annual average concentrations developed to protect the public health from the effects that may be associated with long term exposure to contaminants. Short term Guideline Concentrations (SGCs) address any significant health or environmental effects at off-site receptors which might be associated with acute (short term) exposures to air contaminants. These guideline concentrations were developed by the NYSDEC and the NYSDOH for reviewing area and source air permits to protect public health and the environment. The concentrations are similar to occupational exposure limits developed by the Occupational Safety and Health Administration (OSHA) and other agencies, except the AGCs are intended to account for a lifetime of potential exposure.
In contrast, New York State Ambient Air Quality Standard for H2S are based on nuisance odors, rather than health.

As discussed in Section 3.3.3., landfill gas contains hydrogen sulfide. Sulfur-containing chemicals, such as hydrogen sulfide, can have a rotten-egg smell. Hydrogen sulfide is not a carcinogen and has not been shown to cause cancer in humans. (https://www.atsdr.cdc.gov/toxfaqs/tfacts114.pdf). Hydrogen Sulfide is also not a hazardous air pollutant (42 U.S. Code § 7412).
Hydrogen sulfide is produced by a variety of sources in a community, even those without landfills. For instance, wet soil, wetlands, stormwater drains, sewer pipes, liquid manure (commonly used as fertilizer on farm fields), and municipal wastewater treatment plants all emit hydrogen sulfide.
(https://www.frontiersin.org/journals/microbiology/articles/10.3389/fmicb.2020.01127/full; https://www.osha.gov/hydrogen-sulfide/hydrogen-sulfide-workplaces).

The geography surrounding the Facility is home to vast wetland areas, including the Montezuma National Wildlife Refuge, which comprises over 8,000 acres of wetlands.

The New York State Ambient Air Quality Standard for hydrogen sulfide is 10 parts per billion (ppb) (over a one-hour period) (6 NYCRR Part 257). The purpose of New York State standard is to prevent disagreeable odors, and is not a health-based standard. To prevent the health-based risks of H2S, OSHA set a health-based standard of 10,000 ppb for worker safety and protection (29 CFR 1926.55). OSHA's health-based standard of 10,000 ppb standard is three orders of magnitude higher than New York State's odor-based standard of 10 ppb. Thus, hydrogen sulfide can be smelled at concentrations far lower than are associated with adverse health effects. Landfill gas from the Facility is, and landfill gas from the SMI Valley Infill Project will be, collected and routed to a nearby energy facility to produce electricity and pipeline-quality gas and any remaining collected landfill gas is flared. This reduces hydrogen sulfide emissions to the maximum extent possible (approximately 89%).

Only treated leachate is discharged to the local sewers which does not produce any objectionable odors.

The Facility's Title V permit requires the Facility to demonstrate compliance with the New York State odor-based air quality standard of 10 ppb. To demonstrate compliance with this requirement, the Facility installed ambient monitoring equipment around the perimeter of the Facility Site pursuant to a NYSDEC-approved work plan, and the monitoring data is submitted to NYSDEC. The vast majority of the time, hydrogen sulfide is not detected. On a few occasions, hydrogen sulfide has been measured at levels exceeding 10 ppb. In accordance with the approved workplan upon such exceedances SMI conducts a follow-up investigation. The follow-up investigations have detected no exceedances of the NYS standard attributable to the landfill. Moreover, hydrogen sulfide is at all times orders of magnitude below the OSHA health-based standard of 10,000 ppb.